

SEQUENCE LISTING

<110> Bristol-Myers Squibb Company

<120> A NOVEL HUMAN LEUCINE-RICH REPEAT CONTAINING PROTEIN EXPRESSED
PREDOMINATELY IN BONE MARROW, HLRRBM1

<130> D0067NP

<150> US 60/257,773

<151> 2000-12-22

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<170> PatentIn version 3.0

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Val	Val	Leu	Leu	Tyr	His	Arg	Leu	His	Pro	Glu	Glu	Val	Thr	Phe
1235						1240					1245			
His	Leu	Tyr	Leu	Ile	Pro	Ser	Asp	Cys	Ser	Ile	Arg	Lys	Glu	Leu
1250						1255					1260			
Glu	Leu	Cys	Tyr	Arg	Ser	Pro	Gly	Glu	Asp	Gln	Leu	Phe	Ser	Glu
1265						1270					1275			
Phe	Tyr	Val	Gly	His	Leu	Gly	Ser	Gly	Ile	Arg	Leu	Gln	Val	Lys
1280						1285					1290			
Asp	Lys	Lys	Asp	Glu	Thr	Leu	Val	Trp	Glu	Ala	Leu	Val	Lys	Pro
1295						1300					1305			
Gly	Asp	Leu	Met	Pro	Ala	Thr	Thr	Leu	Ile	Pro	Pro	Ala	Cys	Ile
1310						1315					1320			
Ala	Val	Pro	Ser	Pro	Leu	Asp	Ala	Pro	Gln	Leu	Leu	His	Phe	Val
1325						1330					1335			
Asp	Gln	Tyr	Arg	Glu	Gln	Leu	Ile	Ala	Arg	Val	Thr	Ser	Val	Glu
1340						1345					1350			
Val	Val	Leu	Asp	Lys	Leu	His	Gly	Gln	Val	Leu	Ser	Gln	Glu	Gln
1355						1360					1365			
Tyr	Glu	Arg	Val	Leu	Ala	Glu	Asn	Thr	Arg	Pro	Ser	Gln	Met	Arg
1370						1375					1380			
Lys	Leu	Phe	Ser	Leu	Ser	Gln	Ser	Trp	Asp	Arg	Lys	Cys	Lys	Asp
1385						1390					1395			
Gly	Leu	Tyr	Gln	Ala	Leu	Lys	Glu	Thr	His	Pro	His	Leu	Ile	Met
1400						1405					1410			
Glu	Leu	Trp	Glu	Lys	Gly	Ser	Lys	Lys	Gly	Leu	Leu	Pro	Leu	Ser
1415						1420					1425			

Ser

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 <212> PRT
 <213> Homo sapiens

<400> 4

Met Glu Glu Gln Gly His Ser Glu Met Glu Ile Ile Pro Ser Glu Ser
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His Pro His Ile Gln Leu Leu Lys Ser Asn Arg Glu Leu Leu Val Thr
20 25 30
His Ile Arg Asn Thr Gln Cys Leu Val Asp Asn Leu Leu Lys Asn Asp
35 40 45
Tyr Phe Ser Ala Glu Asp Ala Glu Ile Val Cys Ala Cys Pro Thr Gln
50 55 60
Pro Asp Lys Val Arg Lys Ile Leu Asp Leu Val Gln Ser Lys Gly Glu
65 70 75 80
Glu Val Ser Glu Phe Phe Leu Tyr Leu Leu Gln Gln Leu Ala Asp Ala
85 90 95
Tyr Val Asp Leu Arg Pro Trp Leu Leu Glu Ile Gly Phe Ser Pro Ser
100 105 110
Leu Leu Thr Gln Ser Lys Val Val Val Asn Thr Asp Pro Val Ser Arg
115 120 125
Tyr Thr Gln Gln Leu Arg His His Leu Gly Arg Asp Ser Lys Phe Val
130 135 140
Leu Cys Tyr Ala Gln Lys Glu Glu Leu Leu Leu Glu Glu Ile Tyr Met
145 150 155 160
Asp Thr Ile Met Glu Leu Val Gly Phe Ser Asn Glu Ser Leu Gly Ser
165 170 175
Leu Asn Ser Leu Ala Cys Leu Leu Asp His Thr Thr Gly Ile Leu Asn
180 185 190
Glu Gln Gly Glu Thr Ile Phe Ile Leu Gly Asp Ala Gly Val Gly Lys
195 200 205
Ser Met Leu Leu Gln Arg Leu Gln Ser Leu Trp Ala Thr Gly Arg Leu
210 215 220
Asp Ala Gly Val Lys Phe Phe Phe His Phe Arg Cys Arg Met Phe Ser
225 230 235 240
Cys Phe Lys Glu Ser Asp Arg Leu Cys Leu Gln Asp Leu Leu Phe Lys
245 250 255
His Tyr Cys Tyr Pro Glu Arg Asp Pro Glu Glu Val Phe Ala Phe Leu
260 265 270
Leu Arg Phe Pro His Val Ala Leu Phe Thr Phe Asp Gly Leu Asp Glu
275 280 285
Leu His Ser Asp Leu Asp Leu Ser Arg Val Pro Asp Ser Ser Cys Pro
290 295 300
Trp Glu Pro Ala His Pro Leu Val Leu Leu Ala Asn Leu Leu Ser Gly

305		310		315		320									
Lys	Leu	Leu	Lys	Gly	Ala	Ser	Lys	Leu	Leu	Thr	Ala	Arg	Thr	Gly	Ile
				325					330					335	
Glu	Val	Pro	Arg	Gln	Phe	Leu	Arg	Lys	Lys	Val	Leu	Leu	Arg	Gly	Phe
			340					345					350		
Ser	Pro	Ser	His	Leu	Arg	Ala	Tyr	Ala	Arg	Arg	Met	Phe	Pro	Glu	Arg
		355					360					365			
Ala	Leu	Gln	Asp	Arg	Leu	Leu	Ser	Gln	Leu	Glu	Ala	Asn	Pro	Asn	Leu
	370					375					380				
Cys	Ser	Leu	Cys	Ser	Val	Pro	Leu	Phe	Cys	Trp	Ile	Ile	Phe	Arg	Cys
385					390					395					400
Phe	Gln	His	Phe	Arg	Ala	Ala	Phe	Glu	Gly	Ser	Pro	Gln	Leu	Pro	Asp
				405					410					415	
Cys	Thr	Met	Thr	Leu	Thr	Asp	Val	Phe	Leu	Leu	Val	Thr	Glu	Val	His
			420					425					430		
Leu	Asn	Arg	Met	Gln	Pro	Ser	Ser	Leu	Val	Gln	Arg	Asn	Thr	Arg	Ser
		435					440					445			
Pro	Val	Glu	Thr	Leu	His	Ala	Gly	Arg	Asp	Thr	Leu	Cys	Ser	Leu	Gly
	450					455					460				
Gln	Val	Ala	His	Arg	Gly	Met	Glu	Lys	Ser	Leu	Phe	Val	Phe	Thr	Gln
465					470					475					480
Glu	Glu	Val	Gln	Ala	Ser	Gly	Leu	Gln	Glu	Arg	Asp	Met	Gln	Leu	Gly
			485						490					495	
Phe	Leu	Arg	Ala	Leu	Pro	Glu	Leu	Gly	Pro	Gly	Gly	Asp	Gln	Gln	Ser
			500					505					510		
Tyr	Glu	Phe	Phe	His	Leu	Thr	Leu	Gln	Ala	Phe	Phe	Thr	Ala	Phe	Phe
		515					520					525			
Leu	Val	Leu	Asp	Asp	Arg	Val	Gly	Thr	Gln	Glu	Leu	Leu	Arg	Phe	Phe
	530					535					540				
Gln	Glu	Trp	Met	Pro	Pro	Ala	Gly	Ala	Ala	Thr	Thr	Ser	Cys	Tyr	Pro
545					550					555					560
Pro	Phe	Leu	Pro	Phe	Gln	Cys	Leu	Gln	Gly	Ser	Gly	Pro	Ala	Arg	Glu
				565					570					575	
Asp	Leu	Phe	Lys	Asn	Lys	Asp	His	Phe	Gln	Phe	Thr	Asn	Leu	Phe	Leu
			580					585					590		
Cys	Gly	Leu	Leu	Ser	Lys	Ala	Lys	Gln	Lys	Leu	Leu	Arg	His	Leu	Val
	595						600					605			
Pro	Ala	Ala	Ala	Leu	Arg	Arg	Lys	Arg	Lys	Ala	Leu	Trp	Ala	His	Leu
	610					615					620				
Phe	Ser	Ser	Leu	Arg	Gly	Tyr	Leu	Lys	Ser	Leu	Pro	Arg	Val	Gln	Val
625					630					635					640

Glu	Ser	Phe	Asn	Gln	Val	Gln	Ala	Met	Pro	Thr	Phe	Ile	Trp	Met	Leu	645	650	655
Arg	Cys	Ile	Tyr	Glu	Thr	Gln	Ser	Gln	Lys	Val	Gly	Gln	Leu	Ala	Ala	660	665	670
Arg	Gly	Ile	Cys	Ala	Asn	Tyr	Leu	Lys	Leu	Thr	Tyr	Cys	Asn	Ala	Cys	675	680	685
Ser	Ala	Asp	Cys	Ser	Ala	Leu	Ser	Phe	Val	Leu	His	His	Phe	Pro	Lys	690	695	700
Arg	Leu	Ala	Leu	Asp	Leu	Asp	Asn	Asn	Asn	Leu	Asn	Asp	Tyr	Gly	Val	705	710	715
Arg	Glu	Leu	Gln	Pro	Cys	Phe	Ser	Arg	Leu	Thr	Val	Leu	Arg	Leu	Ser	725	730	735
Val	Asn	Gln	Ile	Thr	Asp	Gly	Gly	Val	Lys	Val	Leu	Ser	Glu	Glu	Leu	740	745	750
Thr	Lys	Tyr	Lys	Ile	Val	Thr	Tyr	Leu	Gly	Leu	Tyr	Asn	Asn	Gln	Ile	755	760	765
Thr	Asp	Val	Gly	Ala	Arg	Tyr	Val	Thr	Lys	Ile	Leu	Asp	Glu	Cys	Lys	770	775	780
Gly	Leu	Thr	His	Leu	Lys	Leu	Gly	Lys	Asn	Lys	Ile	Thr	Ser	Glu	Gly	785	790	795
Gly	Lys	Tyr	Leu	Ala	Leu	Ala	Val	Lys	Asn	Ser	Lys	Ser	Ile	Ser	Glu	805	810	815
Val	Gly	Met	Trp	Gly	Asn	Gln	Val	Gly	Asp	Glu	Gly	Ala	Lys	Ala	Phe	820	825	830
Ala	Glu	Ala	Leu	Arg	Asn	His	Pro	Ser	Leu	Thr	Thr	Leu	Ser	Leu	Ala	835	840	845
Ser	Asn	Gly	Ile	Ser	Thr	Glu	Gly	Gly	Lys	Ser	Leu	Ala	Arg	Ala	Leu	850	855	860
Gln	Gln	Asn	Thr	Ser	Leu	Glu	Ile	Leu	Trp	Leu	Thr	Gln	Asn	Glu	Leu	865	870	875
Asn	Asp	Glu	Val	Ala	Glu	Ser	Leu	Ala	Glu	Met	Leu	Lys	Val	Asn	Gln	885	890	895
Thr	Leu	Lys	His	Leu	Trp	Leu	Ile	Gln	Asn	Gln	Ile	Thr	Ala	Lys	Gly	900	905	910
Thr	Ala	Gln	Leu	Ala	Asp	Ala	Leu	Gln	Ser	Asn	Thr	Gly	Ile	Thr	Glu	915	920	925
Ile	Cys	Leu	Asn	Gly	Asn	Leu	Ile	Lys	Pro	Glu	Glu	Ala	Lys	Val	Tyr	930	935	940
Glu	Asp	Glu	Lys	Arg	Ile	Ile	Cys	Phe								945	950	

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 cttcagttgc ttgtacgaga tccaggagga ggagtttata cagcaggccc tgagccactt 180
 ccaggtgatc gtggtcagca acattgcctc caagatggag cacatgggtct cctcgttctg 240
 tctgatgcgc tgcaggagcg cccaggtggg gcacttgat ggcgccacct acagcgcgga 300
 cggggaag 308

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 Phe Thr Met Cys Phe Val Pro Leu Val Cys Trp Val Val Cys Thr Cys
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 tccactgcaa caggtccatc 80

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<400> 11

Gly Leu Leu Arg Gln Thr Ser Arg Thr Thr Thr Ala Val
1 5 10

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Ser Phe Leu Ala Leu Thr Ser Arg Phe Leu Phe Gly Leu
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Met Asn Gln Ser Ala Thr Glu Cys Ser Met
1 5 10

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<211> 514

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<213> homo sapiens

<400> 14

Met Cys Phe Ile Pro Leu Val Cys Trp Ile Val Cys Thr Gly Leu Lys
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Gln Gln Met Glu Ser Gly Lys Ser Leu Ala Gln Thr Ser Lys Thr Ser
20 25 30

Thr Ala Val Tyr Val Phe Phe Leu Ser Ser Leu Leu Gln Pro Arg Gly
35 40 45

Gly Ser Gln Glu His Gly Leu Cys Ala His Leu Trp Gly Leu Cys Ser
50 55 60

Leu Ala Ala Asp Gly Ile Trp Asn Gln Lys Ile Leu Phe Glu Glu Ser
65 70 75 80

Asp Leu Arg Asn His Gly Leu Gln Lys Ala Asp Val Ser Ala Phe Leu
85 90 95

Arg	Met	Asn	Leu	Phe	Gln	Lys	Glu	Val	Asp	Cys	Glu	Lys	Phe	Tyr	Ser	
			100					105					110			
Phe	Ile	His	Met	Thr	Phe	Gln	Glu	Phe	Phe	Ala	Ala	Met	Tyr	Tyr	Leu	
		115					120					125				
Leu	Glu	Glu	Glu	Lys	Glu	Gly	Arg	Thr	Asn	Val	Pro	Gly	Ser	Arg	Leu	
	130					135					140					
Lys	Leu	Pro	Ser	Arg	Asp	Val	Thr	Val	Leu	Leu	Glu	Asn	Tyr	Gly	Lys	
	145				150					155					160	
Phe	Glu	Lys	Gly	Tyr	Leu	Ile	Phe	Val	Val	Arg	Phe	Leu	Phe	Gly	Leu	
				165					170					175		
Val	Asn	Gln	Glu	Arg	Thr	Ser	Tyr	Leu	Glu	Lys	Lys	Leu	Ser	Cys	Met	
			180					185					190			
Ile	Ser	Gln	Gln	Ile	Arg	Leu	Glu	Leu	Leu	Lys	Trp	Ile	Glu	Val	Lys	
		195					200					205				
Ala	Lys	Ala	Lys	Lys	Leu	His	Asp	Gln	Pro	Ser	Gln	Leu	Glu	Leu	Phe	
	210					215					220					
Tyr	Cys	Leu	Tyr	Glu	Met	Gln	Glu	Glu	Asp	Phe	Val	Gln	Arg	Ala	Met	
	225				230					235					240	
Asp	Tyr	Phe	Pro	Lys	Ile	Glu	Ile	Asn	Leu	Ser	Thr	Arg	Met	Asp	His	
				245					250					255		
Met	Val	Ser	Ser	Phe	Cys	Ile	Glu	Asn	Cys	His	Arg	Val	Glu	Ser	Leu	
			260					265					270			
Ser	Leu	Gly	Phe	Leu	His	Asn	Met	Pro	Lys	Glu	Glu	Glu	Glu	Glu	Glu	
		275					280					285				
Lys	Glu	Gly	Arg	His	Leu	Asp	Met	Val	Gln	Cys	Val	Leu	Pro	Ser	Ser	
	290					295					300					
Ser	His	Ala	Ala	Cys	Ser	His	Gly	Leu	Gly	Arg	Cys	Gly	Leu	Ser	His	
	305				310					315					320	
Glu	Cys	Cys	Phe	Asp	Ile	Ser	Leu	Val	Leu	Ser	Ser	Asn	Gln	Lys	Leu	
				325					330					335		
Val	Glu	Leu	Asp	Leu	Ser	Asp	Asn	Ala	Leu	Gly	Asp	Phe	Gly	Ile	Arg	
			340					345					350			
Leu	Leu	Cys	Val	Gly	Leu	Lys	His	Leu	Leu	Cys	Asn	Leu	Lys	Lys	Leu	
		355					360					365				
Trp	Leu	Val	Asn	Ser	Ala	Leu	Arg	Gln	Ser	Val	Val	Gln	Leu	Cys	Pro	
	370					375					380					
Arg	Tyr	Ser	Ala	Leu	Ile	Arg	Ile	Ser	Arg	Thr	Phe	Thr	Ala	Arg	Gln	
	385				390				395						400	
His	Ser	Arg	Arg	Gln	Gly	Ile	Lys	Leu	Leu	Cys	Glu	Gly	Leu	Leu	His	
				405				410						415		

Pro Asp Cys Lys Leu Gln Val Leu Glu Leu Asp Asn Cys Asn Leu Thr
420 425 430

Ser His Cys Cys Trp Asp Leu Ser Thr Leu Leu Thr Ser Ser Gln Ser
435 440 445

Leu Arg Lys Leu Ser Leu Gly Asn Asn Asp Leu Gly Asp Leu Gly Val
450 455 460

Met Met Phe Cys Glu Val Leu Lys Gln Gln Ser Cys Leu Leu Gln Asn
465 470 475 480

Leu Gly Leu Ser Glu Met Tyr Phe Asn Tyr Glu Thr Lys Ser Ala Leu
485 490 495

Glu Thr Leu Gln Glu Glu Lys Pro Glu Leu Thr Val Val Phe Glu Pro
500 505 510

Ser Trp

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<212> PRT
<213> homo sapiens

<400> 15

Met Ala Gly Gly Ala Trp Gly Arg Leu Ala Cys Tyr Leu Glu Phe Leu
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Lys Lys Glu Glu Leu Lys Glu Phe Gln Leu Leu Leu Ala Asn Lys Ala
20 25 30

His Ser Arg Ser Ser Ser Gly Glu Thr Pro Ala Gln Pro Glu Lys Thr
35 40 45

Ser Gly Met Glu Val Ala Ser Tyr Leu Val Ala Gln Tyr Gly Glu Gln
50 55 60

Arg Ala Trp Asp Leu Ala Leu His Thr Trp Glu Gln Met Gly Leu Arg
65 70 75 80

Ser Leu Cys Ala Gln Ala Gln Glu Gly Ala Gly His Ser Pro Ser Phe
85 90 95

Pro Tyr Ser Pro Ser Glu Pro His Leu Gly Ser Pro Ser Gln Pro Thr
100 105 110

Ser Thr Ala Val Leu Met Pro Trp Ile His Glu Leu Pro Ala Gly Cys
115 120 125

Thr Gln Gly Ser Glu Arg Arg Val Leu Arg Gln Leu Pro Asp Thr Ser
130 135 140

Gly Arg Arg Trp Arg Glu Ile Ser Ala Ser Leu Leu Tyr Gln Ala Leu
145 150 155 160

Pro Ser Ser Pro Asp His Glu Ser Pro Ser Gln Glu Ser Pro Asn Ala
165 170 175

Pro Thr Ser Thr Ala Val Leu Gly Ser Trp Gly Ser Pro Pro Gln Pro
 180 185 190
 Ser Leu Ala Pro Arg Glu Gln Glu Ala Pro Gly Thr Gln Trp Pro Leu
 195 200 205
 Asp Glu Thr Ser Gly Ile Tyr Tyr Thr Glu Ile Arg Glu Arg Glu Arg
 210 215 220
 Glu Lys Ser Glu Lys Gly Arg Pro Pro Trp Ala Ala Val Val Gly Thr
 225 230 235 240
 Pro Pro Gln Ala His Thr Ser Leu Gln Pro His His His Pro Trp Glu
 245 250 255
 Pro Ser Val Arg Glu Ser Leu Cys Ser Thr Trp Pro Trp Lys Asn Glu
 260 265 270
 Asp Phe Asn Gln Lys Phe Thr Gln Leu Leu Leu Leu Gln Arg Pro His
 275 280 285
 Pro Arg Ser Gln Asp Pro Leu Val Lys Arg Ser Trp Pro Asp Tyr Val
 290 295 300
 Glu Glu Asn Arg Gly His Leu Ile Glu Ile Arg Asp Leu Phe Gly Pro
 305 310 315 320
 Gly Leu Asp Thr Gln Glu Pro Arg Ile Val Ile Leu Gln Gly Ala Ala
 325 330 335
 Gly Ile Gly Lys Ser Thr Leu Ala Arg Gln Val Lys Glu Ala Trp Gly
 340 345 350
 Arg Gly Gln Leu Tyr Gly Asp Arg Phe Gln His Val Phe Tyr Phe Ser
 355 360 365
 Cys Arg Glu Leu Ala Gln Ser Lys Val Val Ser Leu Ala Glu Leu Ile
 370 375 380
 Gly Lys Asp Gly Thr Ala Thr Pro Ala Pro Ile Arg Gln Ile Leu Ser
 385 390 395 400
 Arg Pro Glu Arg Leu Leu Phe Ile Leu Asp Gly Val Asp Glu Pro Gly
 405 410 415
 Trp Val Leu Gln Glu Pro Ser Ser Glu Leu Cys Leu His Trp Ser Gln
 420 425 430
 Pro Gln Pro Ala Asp Ala Leu Leu Gly Ser Leu Leu Gly Lys Thr Ile
 435 440 445
 Leu Pro Glu Ala Ser Phe Leu Ile Thr Ala Arg Thr Thr Ala Leu Gln
 450 455 460
 Asn Leu Ile Pro Ser Leu Glu Gln Ala Arg Trp Val Glu Val Leu Gly
 465 470 475 480
 Phe Ser Glu Ser Ser Arg Lys Glu Tyr Phe Tyr Arg Tyr Phe Thr Asp
 485 490 495
 Glu Arg Gln Ala Ile Arg Ala Phe Arg Leu Val Lys Ser Asn Lys Glu

500					505					510					
Leu	Trp	Ala	Leu	Cys	Leu	Val	Pro	Trp	Val	Ser	Trp	Leu	Ala	Cys	Thr
		515					520					525			
Cys	Leu	Met	Gln	Gln	Met	Lys	Arg	Lys	Glu	Lys	Leu	Thr	Leu	Thr	Ser
		530				535					540				
Lys	Thr	Thr	Thr	Thr	Leu	Cys	Leu	His	Tyr	Leu	Ala	Gln	Ala	Leu	Gln
						550					555				560
Ala	Gln	Pro	Leu	Gly	Pro	Gln	Leu	Arg	Asp	Leu	Cys	Ser	Leu	Ala	Ala
				565					570					575	
Glu	Gly	Ile	Trp	Gln	Lys	Lys	Thr	Leu	Phe	Ser	Pro	Asp	Asp	Leu	Arg
			580					585					590		
Lys	His	Gly	Leu	Asp	Gly	Ala	Ile	Ile	Ser	Thr	Phe	Leu	Lys	Met	Gly
		595					600					605			
Ile	Leu	Gln	Glu	His	Pro	Ile	Pro	Leu	Ser	Tyr	Ser	Phe	Ile	His	Leu
		610				615					620				
Cys	Phe	Gln	Glu	Phe	Phe	Ala	Ala	Met	Ser	Tyr	Val	Leu	Glu	Asp	Glu
						630					635				640
Lys	Gly	Arg	Gly	Lys	His	Ser	Asn	Cys	Ile	Ile	Asp	Leu	Glu	Lys	Thr
				645					650					655	
Leu	Glu	Ala	Tyr	Gly	Ile	His	Gly	Leu	Phe	Gly	Ala	Ser	Thr	Thr	Arg
			660					665					670		
Phe	Leu	Leu	Gly	Leu	Leu	Ser	Asp	Glu	Gly	Glu	Arg	Glu	Met	Glu	Asn
			675				680					685			
Ile	Phe	His	Cys	Arg	Leu	Ser	Gln	Gly	Arg	Asn	Leu	Met	Gln	Trp	Val
						695					700				
Pro	Ser	Leu	Gln	Leu	Leu	Leu	Gln	Pro	His	Ser	Leu	Glu	Ser	Leu	His
						710					715				720
Cys	Leu	Tyr	Glu	Thr	Arg	Asn	Lys	Thr	Phe	Leu	Thr	Gln	Val	Met	Ala
				725					730					735	
His	Phe	Glu	Glu	Met	Gly	Met	Cys	Val	Glu	Thr	Asp	Met	Glu	Leu	Leu
			740					745					750		
Val	Cys	Thr	Phe	Cys	Ile	Lys	Phe	Ser	Arg	His	Val	Lys	Lys	Leu	Gln
			755				760					765			
Leu	Ile	Glu	Gly	Arg	Gln	His	Arg	Ser	Thr	Trp	Ser	Pro	Thr	Met	Val
			770			775					780				
Val	Leu	Phe	Arg	Trp	Val	Pro	Val	Thr	Asp	Ala	Tyr	Trp	Gln	Ile	Leu
				790							795				800
Phe	Ser	Val	Leu	Lys	Val	Thr	Arg	Asn	Leu	Lys	Glu	Leu	Asp	Leu	Ser
				805					810					815	
Gly	Asn	Ser	Leu	Ser	His	Ser	Ala	Val	Lys	Ser	Leu	Cys	Lys	Thr	Leu
			820				825						830		

Arg Arg Pro Arg Cys Leu Leu Glu Thr Leu Arg Leu Ala Gly Cys Gly
 835 840 845
 Leu Thr Ala Glu Asp Cys Lys Asp Leu Ala Phe Gly Leu Arg Ala Asn
 850 855 860
 Gln Thr Leu Thr Glu Leu Asp Leu Ser Phe Asn Val Leu Thr Asp Ala
 865 870 875 880
 Gly Ala Lys His Leu Cys Gln Arg Leu Arg Gln Pro Ser Cys Lys Leu
 885 890 895
 Gln Arg Leu Gln Leu Val Ser Cys Gly Leu Thr Ser Asp Cys Cys Gln
 900 905 910
 Asp Leu Ala Ser Val Leu Ser Ala Ser Pro Ser Leu Lys Glu Leu Asp
 915 920 925
 Leu Gln Gln Asn Asn Leu Asp Asp Val Gly Val Arg Leu Leu Cys Glu
 930 935 940
 Gly Leu Arg His Pro Ala Cys Lys Leu Ile Arg Leu Gly Leu Asp Gln
 945 950 955 960
 Thr Thr Leu Ser Asp Glu Met Arg Gln Glu Leu Arg Ala Leu Glu Gln
 965 970 975
 Glu Lys Pro Gln Leu Leu Ile Phe Ser Arg Arg Lys Pro Ser Val Met
 980 985 990
 Thr Pro Thr Glu Gly Leu Asp Thr Gly Glu Met Ser Asn Ser Thr Ser
 995 1000 1005
 Ser Leu Lys Arg Gln Arg Leu Gly Ser Glu Arg Ala Ala Ser His
 1010 1015 1020
 Val Ala Gln Ala Asn Leu Lys Leu Leu Asp Val Ser Lys Ile Phe
 1025 1030 1035
 Pro Ile Ala Glu Ile Ala Glu Glu Ser Ser Pro Glu Val Val Pro
 1040 1045 1050
 Val Glu Leu Leu Cys Val Pro Ser Pro Ala Ser Gln Gly Asp Leu
 1055 1060 1065
 His Thr Lys Pro Leu Gly Thr Asp Asp Asp Phe Trp Gly Pro Thr
 1070 1075 1080
 Gly Pro Val Ala Thr Glu Val Val Asp Lys Glu Lys Asn Leu Tyr
 1085 1090 1095
 Arg Val His Phe Pro Val Ala Gly Ser Tyr Arg Trp Pro Asn Thr
 1100 1105 1110
 Gly Leu Cys Phe Val Met Arg Glu Ala Val Thr Val Glu Ile Glu
 1115 1120 1125
 Phe Cys Val Trp Asp Gln Phe Leu Gly Glu Ile Asn Pro Gln His
 1130 1135 1140

Ser	Trp	Met	Val	Ala	Gly	Pro	Leu	Leu	Asp	Ile	Lys	Ala	Glu	Pro
1145						1150					1155			
Gly	Ala	Val	Glu	Ala	Val	His	Leu	Pro	His	Phe	Val	Ala	Leu	Gln
1160						1165					1170			
Gly	Gly	His	Val	Asp	Thr	Ser	Leu	Phe	Gln	Met	Ala	His	Phe	Lys
1175						1180					1185			
Glu	Glu	Gly	Met	Leu	Leu	Glu	Lys	Pro	Ala	Arg	Val	Glu	Leu	His
1190						1195					1200			
His	Ile	Val	Leu	Glu	Asn	Pro	Ser	Phe	Ser	Pro	Leu	Gly	Val	Leu
1205						1210					1215			
Leu	Lys	Met	Ile	His	Asn	Ala	Leu	Arg	Phe	Ile	Pro	Val	Thr	Ser
1220						1225					1230			
Val	Val	Leu	Leu	Tyr	His	Arg	Val	His	Pro	Glu	Glu	Val	Thr	Phe
1235						1240					1245			
His	Leu	Tyr	Leu	Ile	Pro	Ser	Asp	Cys	Ser	Ile	Arg	Lys	Glu	Leu
1250						1255					1260			
Glu	Leu	Cys	Tyr	Arg	Ser	Pro	Gly	Glu	Asp	Gln	Leu	Phe	Ser	Glu
1265						1270					1275			
Phe	Tyr	Val	Gly	His	Leu	Gly	Ser	Gly	Ile	Arg	Leu	Gln	Val	Lys
1280						1285					1290			
Asp	Lys	Lys	Asp	Glu	Thr	Leu	Val	Trp	Glu	Ala	Leu	Val	Lys	Pro
1295						1300					1305			
Gly	Asp	Leu	Met	Pro	Ala	Thr	Thr	Leu	Ile	Pro	Pro	Ala	Arg	Ile
1310						1315					1320			
Ala	Val	Pro	Ser	Pro	Leu	Asp	Ala	Pro	Gln	Leu	Leu	His	Phe	Val
1325						1330					1335			
Asp	Gln	Tyr	Arg	Glu	Gln	Leu	Ile	Ala	Arg	Val	Thr	Ser	Val	Glu
1340						1345					1350			
Val	Val	Leu	Asp	Lys	Leu	His	Gly	Gln	Val	Leu	Ser	Gln	Glu	Gln
1355						1360					1365			
Tyr	Glu	Arg	Val	Leu	Ala	Glu	Asn	Thr	Arg	Pro	Ser	Gln	Met	Arg
1370						1375					1380			
Lys	Leu	Phe	Ser	Leu	Ser	Gln	Ser	Trp	Asp	Arg	Lys	Cys	Lys	Asp
1385						1390					1395			
Gly	Leu	Tyr	Gln	Ala	Leu	Lys	Glu	Thr	His	Pro	His	Leu	Ile	Met
1400						1405					1410			
Glu	Leu	Trp	Glu	Lys	Gly	Ser	Lys	Lys	Gly	Leu	Leu	Pro	Leu	Ser
1415						1420					1425			

Ser

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<211> 8
 <212> PRT
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<400> 16

Asp Tyr Lys Asp Asp Asp Asp Lys
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<210> 17
 <211> 733
 <212> DNA
 <213> homo sapiens

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 tctcccgga tcttgaggtc acatgctgtg tggtggacgt aagccacgaa gaccctgagg 180
 tcaagttcaa ctggtacgtg gacggcgtgg aggtgcataa tgccaagaca aagccgcggg 240
 aggagcagta caacagcacg taccgtgtgg tcagcgtcct caccgtcctg caccaggact 300
 ggctgaatgg caaggagtac aagtgcagg tctccaacaa agccctcca acccccatcg 360
 agaaaaccat ctcaaagcc aaagggcagc cccgagaacc acaggtgtac accctgcccc 420
 catcccggga tgagctgacc aagaaccagg tcagcctgac ctgcctgggtc aaaggcttct 480
 atccaagcga catcgccgtg gagtgggaga gcaatgggca gccggagaac aactacaaga 540
 ccacgcctcc cgtgctggac tccgacggct ccttcttct ctacagcaag ctcaccgtgg 600
 acaagagcag gtggcagcag gggaaagtct tctcatgtc cgtgatgcat gaggctctgc 660
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 gactctagag gat 733

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 <211> 1034
 <212> PRT
 <213> Homo sapiens

<400> 18

Met Ala Ser Thr Arg Cys Lys Leu Ala Arg Tyr Leu Glu Asp Leu Glu
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 Asp Val Asp Leu Lys Lys Phe Lys Met His Leu Glu Asp Tyr Pro Pro
 20 25 30
 Gln Lys Gly Cys Ile Pro Leu Pro Arg Gly Gln Thr Glu Lys Ala Asp
 35 40 45
 His Val Asp Leu Ala Thr Leu Met Ile Asp Phe Asn Gly Glu Glu Lys
 50 55 60

Ala Trp Ala Met Ala Val Trp Ile Phe Ala Ala Ile Asn Arg Arg Asp
 65 70 75 80
 Leu Tyr Glu Lys Ala Lys Arg Asp Glu Pro Lys Trp Gly Ser Asp Asn
 85 90 95
 Ala Arg Val Ser Asn Pro Thr Val Ile Cys Gln Glu Asp Ser Ile Glu
 100 105 110
 Glu Glu Trp Met Gly Leu Leu Glu Tyr Leu Ser Arg Ile Ser Ile Cys
 115 120 125
 Lys Met Lys Lys Asp Tyr Arg Lys Lys Tyr Arg Lys Tyr Val Arg Ser
 130 135 140
 Arg Phe Gln Cys Ile Glu Asp Arg Asn Ala Arg Leu Gly Glu Ser Val
 145 150 155 160
 Ser Leu Asn Lys Arg Tyr Thr Arg Leu Arg Leu Ile Lys Glu His Arg
 165 170 175
 Ser Gln Gln Glu Arg Glu Gln Glu Leu Leu Ala Ile Gly Lys Thr Lys
 180 185 190
 Thr Cys Glu Ser Pro Val Ser Pro Ile Lys Met Glu Leu Leu Phe Asp
 195 200 205
 Pro Asp Asp Glu His Ser Glu Pro Val His Thr Val Val Phe Gln Gly
 210 215 220
 Ala Ala Gly Ile Gly Lys Thr Ile Leu Ala Arg Lys Met Met Leu Asp
 225 230 235 240
 Trp Ala Ser Gly Thr Leu Tyr Gln Asp Arg Phe Asp Tyr Leu Phe Tyr
 245 250 255
 Ile His Cys Arg Glu Val Ser Leu Val Thr Gln Arg Ser Leu Gly Asp
 260 265 270
 Leu Ile Met Ser Cys Cys Pro Asp Pro Asn Pro Pro Ile His Lys Ile
 275 280 285
 Val Arg Lys Pro Ser Arg Ile Leu Phe Leu Met Asp Gly Phe Asp Glu
 290 295 300
 Leu Gln Gly Ala Phe Asp Glu His Ile Gly Pro Leu Cys Thr Asp Trp
 305 310 315 320
 Gln Lys Ala Glu Arg Gly Asp Ile Leu Leu Ser Ser Leu Ile Arg Lys
 325 330 335
 Lys Leu Leu Pro Glu Ala Ser Leu Leu Ile Thr Thr Arg Pro Val Ala
 340 345 350
 Leu Glu Lys Leu Gln His Leu Leu Asp His Pro Arg His Val Glu Ile
 355 360 365
 Leu Gly Phe Ser Glu Ala Lys Arg Lys Glu Tyr Phe Phe Lys Tyr Phe
 370 375 380
 Ser Asp Glu Ala Gln Ala Arg Ala Ala Phe Ser Leu Ile Gln Glu Asn

385		390		395		400
Glu Val Leu Phe Thr Met Cys Phe Ile Pro Leu Val Cys Trp Ile Val						
		405		410		415
Cys Thr Gly Leu Lys Gln Gln Met Glu Ser Gly Lys Ser Leu Ala Gln						
		420		425		430
Thr Ser Lys Thr Thr Thr Ala Val Tyr Val Phe Phe Leu Ser Ser Leu						
		435		440		445
Leu Gln Pro Arg Gly Gly Ser Gln Glu His Gly Leu Cys Ala His Leu						
		450		455		460
Trp Gly Leu Cys Ser Leu Ala Ala Asp Gly Ile Trp Asn Gln Lys Ile						
		465		470		475
Leu Phe Glu Glu Ser Asp Leu Arg Asn His Gly Leu Gln Lys Ala Asp						
		485		490		495
Val Ser Ala Phe Leu Arg Met Asn Leu Phe Gln Lys Glu Val Asp Cys						
		500		505		510
Glu Lys Phe Tyr Ser Phe Ile His Met Thr Phe Gln Glu Phe Phe Ala						
		515		520		525
Ala Met Tyr Tyr Leu Leu Glu Glu Glu Lys Glu Gly Arg Thr Asn Val						
		530		535		540
Pro Gly Ser Arg Leu Lys Leu Pro Ser Arg Asp Val Thr Val Leu Leu						
		545		550		555
Glu Asn Tyr Gly Lys Phe Glu Lys Gly Tyr Leu Ile Phe Val Val Arg						
		565		570		575
Phe Leu Phe Gly Leu Val Asn Gln Glu Arg Thr Ser Tyr Leu Glu Lys						
		580		585		590
Lys Leu Ser Cys Lys Ile Ser Gln Gln Ile Arg Leu Glu Leu Leu Lys						
		595		600		605
Trp Ile Glu Val Lys Ala Lys Ala Lys Lys Leu Gln Ile Gln Pro Ser						
		610		615		620
Gln Leu Glu Leu Phe Tyr Cys Leu Tyr Glu Met Gln Glu Glu Asp Phe						
		625		630		635
Val Gln Arg Ala Met Asp Tyr Phe Pro Lys Ile Glu Ile Asn Leu Ser						
		645		650		655
Thr Arg Met Asp His Met Val Ser Ser Phe Cys Ile Glu Asn Cys His						
		660		665		670
Arg Val Glu Ser Leu Ser Leu Gly Phe Leu His Asn Met Pro Lys Glu						
		675		680		685
Glu Glu Glu Glu Glu Lys Glu Gly Arg His Leu Asp Met Val Gln Cys						
		690		695		700
Val Leu Pro Ser Ser Ser His Ala Ala Cys Ser His Gly Leu Val Asn						
		705		710		715
						720

Ser His Leu Thr Ser Ser Phe Cys Arg Gly Leu Phe Ser Val Leu Ser
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 Thr Ser Gln Ser Leu Thr Glu Leu Asp Leu Ser Asp Asn Ser Leu Gly
 740 745 750
 Asp Pro Gly Met Arg Val Leu Cys Glu Thr Leu Gln His Pro Gly Cys
 755 760 765
 Asn Ile Arg Arg Leu Trp Leu Gly Arg Cys Gly Leu Ser His Glu Cys
 770 775 780
 Cys Phe Asp Ile Ser Leu Val Leu Ser Ser Asn Gln Lys Leu Val Glu
 785 790 795 800
 Leu Asp Leu Ser Asp Asn Ala Leu Gly Asp Phe Gly Ile Arg Leu Leu
 805 810 815
 Cys Val Gly Leu Lys His Leu Leu Cys Asn Leu Lys Lys Leu Trp Leu
 820 825 830
 Val Ser Cys Cys Leu Thr Ser Ala Cys Cys Gln Asp Leu Ala Ser Val
 835 840 845
 Leu Ser Thr Ser His Ser Leu Thr Arg Leu Tyr Val Gly Glu Asn Ala
 850 855 860
 Leu Gly Asp Ser Gly Val Ala Ile Leu Cys Glu Lys Ala Lys Asn Pro
 865 870 875 880
 Gln Cys Asn Leu Gln Lys Leu Gly Leu Val Asn Ser Gly Leu Thr Ser
 885 890 895
 Val Cys Cys Ser Ala Leu Ser Ser Val Leu Ser Thr Asn Gln Asn Leu
 900 905 910
 Thr His Leu Tyr Leu Arg Gly Asn Thr Leu Gly Asp Lys Gly Ile Lys
 915 920 925
 Leu Leu Cys Glu Gly Leu Leu His Pro Asp Cys Lys Leu Gln Val Leu
 930 935 940
 Glu Leu Asp Asn Cys Asn Leu Thr Ser His Cys Cys Trp Asp Leu Ser
 945 950 955 960
 Thr Leu Leu Thr Ser Ser Gln Ser Leu Arg Lys Leu Ser Leu Gly Asn
 965 970 975
 Asn Asp Leu Gly Asp Leu Gly Val Met Met Phe Cys Glu Val Leu Lys
 980 985 990
 Gln Gln Ser Cys Leu Leu Gln Asn Leu Gly Leu Ser Glu Met Tyr Phe
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<212> DNA
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37

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<211> 38
<212> DNA
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38

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<211> 37
<212> DNA
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<400> 22
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37